

they were of cheetal fawn. It is significant that though two years have elapsed, the population

of wild dogs has not increased according to the reports available.

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3. SOME OBSERVATIONS ON ANTLER CYCLE OF CAPTIVE CHITAL (*CERVUS AXIS*)

INTRODUCTION

The Chital or Spotted deer (*Cervus axis*) is the most common among eight species of Indian deer. It is well known that the Chital casts off antlers periodically. But limited information is available on the different aspects of antler cycle in this species. This communication is an attempt to present additional information on different aspects of antler cycle of Chital observed in captivity.

METHODS

The data on different aspects of antler cycle of Chital based on the day-to-day observations recorded at the Nandankanan Biological Park, Orissa for a continuous period of 12 years and 6 months (1 October, 1970 to 31 March, 1983) were obtained and studied.

The park is within the biogeographical zone of the species under study. Specimens used for this study include those collected from different parts of Orissa and those born and brought up in the park. The number of Chital stags under observation varied from two to 16.

RESULTS AND DISCUSSION

Period of antler casting: During the observation period, 89 antler castings (spike as well as branched) were recorded on a captive population of Chital stags which varied from

3-11 individuals (Table 1). Antler casting occurred during a nine-month period from August to April. All the stags regularly cast their antlers annually and never retained them to the next year. Majority of castings (70 of 89 castings, 79%) occurred during a three-month period from November to January. Ten castings (11%) occurred during a three-month

TABLE 1

MONTHLY DISTRIBUTION OF CASTING OF ANTLERS AND RUBBING OFF VELVET BY CAPTIVE CHITAL STAGS

Month	Stags casting antlers*	Stags rubbing off velvet**
January	26	2
February	4	3
March	5	8
April	1	23
May	Nil	31
June	Nil	12
July	Nil	3
August	1	1
September	2	Nil
October	6	Nil
November	20	Nil
December	24	Nil
Total	89	83

* 3-11 stags/year

** 2-16 stags/year

period from February to April and nine castings (10%) were observed during a three-month period from August to October.

Chital stags in velvet and in hard horn may be seen throughout the year (Krishnan 1975). The time of casting of antlers in this species varies in different localities; in Madhya Pradesh and South India, it is usually in August and September. The new antlers are in velvet till the end of December but stags carrying horns in various stages of development have been seen at all seasons (Prater 1971). Antlers were dropped without regard to season at the New York Zoological Park, so antlers in various stages of development could be seen at any time (Crandall 1965). According to Schaller (1976) most of the stags of Kanha National Park cast their antlers between August and October, though only four stags lost their antlers between mid-February and mid-June and a few in July. He further stated that in the Calcutta Zoological Garden antlers were cast between September and February which mostly agree with the present findings. Asdell (1964) stated that the antlers are cast at any time in Sri Lanka but in southern Sri Lanka 75% are cast in April and May. At Bandipur National Park, majority of the antlers are cast during the months of September to November (Sharatchandra and Gadgil 1975). The climate, the biogeography and captive management conditions of this park might be responsible for the difference in the season of antler casting in this species from other areas.

Period of velvet rubbing: As usual with the stags of many species of deer, the Chital stags also rub off the velvet from the antlers each year after completion of their growth. During the study period, 83 observations were made on a captive population of 2-16 Chital stags (Table 1). Rubbing off the velvet occurred during an eight-month period from January to August. The majority of stags (74 of 83

clearings, 89%) cleared their velvet during March-June whereas five clearings (6%) were observed during January-February and four clearings (5%) occurred during July-August.

The velvet of antlers are lost at any time in Sri Lanka (Asdell 1964). April to August are the months of loss of velvet at Bandipur National Park (Sharatchandra and Gadgil 1975).

Duration of antler casting: In the 89 cases studied, casting of antlers of both sides was completed in one day in 57 instances (64%), within two consecutive days in 22 instances (25%), within three days in nine instances (10%) and within five days in only one instance (1%). These data indicate that majority of hard antlers (89%) are cast within 1-2 days.

Both the antlers are usually cast on the same day or on consecutive days but only occasionally the second antler is not cast until two or three days after the first one (Schaller 1967). Antlers of both sides are cast in one or two consecutive days (Acharjyo 1971).

Span of antler growth: The period required from the time of casting of hard antlers to the time when the stags start rubbing off the velvet is taken as the span of antler growth. This span, observed in nine cases, varied approximately from 3½ to 5½ months (3½ months on four occasions, four months on two occasions, 4½ months on one occasion, five months on one occasion and 5½ months on one occasion).

The time required for antlers to grow from the day of casting the old set until most of the velvet has been rubbed off the new one, observed in 11 stags in the Calcutta Zoological Garden varied from 2²/₃ to 6¹/₃ months mostly depending on the length of antlers (Schaller 1967).

Interval between antler castings: The inter-casting period observed in eight instances

MISCELLANEOUS NOTES

among four stags varied from 322-382 days.

The antlers are dropped at intervals of approximately ten to twelve months (Schaller 1967).

Age at first antler casting: Three male Chital born in the park on 17 December, 1971, 24 January, 1975 and 11 December, 1980 cast their spike antlers for the first time on 29-30 November, 1973, 24 December, 1976 and 4-6 January, 1983 respectively. These observations suggested that spike antlers were cast at an age of approximately one year, 11 months (two specimens) and 2 years, one month (one specimen). The knob-like pedicels became visible at an age of approximately 10½ months (one specimen) and 11 months (two specimens). As expected, the coronet or burr was absent in spike antlers.

At the age of 11 to 12 months, the first set of antlers is visible as two prominent skin-covered bumps or knobs, and at about two years the spike antlers are cast (Schaller and De 1964).

Size and weight of cast antlers: Eleven cast spike antlers of yearlings varied from 4.0 to 12.5 cm in length (mean \bar{x} 8.18 cm) and 6.850 to 31.600 gm in weight (mean \bar{x} 2.468 gm). Sixteen of the largest 3-pointed cast antlers measured 68.0 to 82.0 cm in length (mean \bar{x} 77.3 cm) and twelve of the largest 3-pointed cast antlers weighed 574 to 840 gm (mean \bar{x} 716.5 gm).

The antlers of yearlings consist of an unbranched spike usually less than seven inches (17.5 cm) long (Schaller and De 1964). The spike horns of Chital measure less than 25 cm in length (Sharatchandra and Gadgil 1975). An 85 cm antler would be good anywhere and 80 cm in south India, although the greatest record is 101 cm (Prater 1971). The longest antler recorded at Calcutta Zoological Garden by Schaller (1967) was 34 inches (85 cm). According to Krishnan (1975) size and formation of antlers differ with locality and are probably dependent mainly on heredity and strain.

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4. FEEDING PATTERN OF AN EGRET

Driving through a drizzle on 2nd June morning to Kihim, Alibag (Maharashtra), along National Highway 17, I saw a freshwater stream with abruptly straight, precipitous sides. On the banks of the stream was gathered a flock of Egrets of various species. As I kept wondering what could be the purpose of this assemblage, I saw an egret hurriedly step forward to the edge of the stream, and throw itself down on the water. Floating on the surface for a split second it picked up a beakful, and laboriously got air-borne, and flew back to the bank. There it went through the act of swallowing its catch, and fluffed off the water soaked in its feathers. From its completely black beak, and yellow mottled feet, I made out the bird to be a Little Egret *Egretta garzetta*.

One invariably sees egrets working down sloping stream banks, and hunting in shallow waters. Often they feed in irrigated paddy fields in the dry season. However, I am not aware of Egrets hurtling themselves onto water from a height either from my personal birding experience, or from any reports published in bird literature. The action of the egret was reminiscent of "bellyflopping" by the Pond Heron described by G.B.F. Muir, in the Society's *Journal* 24: 366-7, and referred to in the HANDBOOK by Drs Salim Ali & S. Dillon Ripley, Vol. 1: 63. Major I. R. Grimwood & M.J.C. Brocklehurst in Society's *Journal* 81(3): 696-7 record the Pond Heron stooping onto water from the air in a clumsy, tern-like manner.

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5. THE VEDANTHANGAL WATER-BIRD SANCTUARY: A NEW BREEDING GROUND FOR PELICANS AND PAINTED STORKS

There are no published reports so far regarding breeding of Grey Pelicans (*Pelecanus philippensis*) and Painted Storks (*Mycteria leucocephala*) at Vedanthangal Water-Bird Sanctuary (Chengleput District, Madras). Krishnan (1960) and Spillett (1966) regarded them as visiting birds and not as breeding

birds. Nagulu and Ramana Rao (1983) considered that the Pelican was an occasional visitor but not a breeding bird to the Vedanthangal Water-Bird Sanctuary, after their visit in 1981. But pelicans were found breeding at the sanctuary during 1983-84 season (Paulraj 1984). They built nests in tall *Barringtonia*